

**Assembly
Council**

Distr.: General
9 April 2008

Original: English

Fourteenth session

Kingston, Jamaica

26 May-6 June 2008

**Proposed budget for the International Seabed Authority for
the Financial Period 2009-2010****Report of the Secretary-General****I. Introduction**

1. The present report sets out the proposed budgetary requirements for the International Seabed Authority for the financial period 2009-2010. In accordance with the 1982 United Nations Convention on the Law of the Sea ("the Convention") and the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 ("the Agreement"), the administrative expenses of the Authority shall be met by assessed contributions of members of the Authority, until the Authority has sufficient funds from other sources to meet those expenses. The proposed budgetary requirements are for biennium 2009-2010. Contributions to the budget will be made on an annual basis for each of the two years.

**II. Summary of budget proposals for the financial
period 2009-2010**

2. The Secretary-General estimates that the budgetary requirements of the Authority for 2009 and 2010 will be in the amounts of \$6,269,200 and \$6,483,200, respectively. The estimate for 2009 comprises \$5,220,800 for the administrative expenses of the Authority and \$1,048,400 for conference-servicing requirements. The estimate for 2010 comprises \$5,401,200 for the administrative expenses of the Authority and \$1,082,000 for conference-servicing requirements. A summary of the proposed administrative budget for the biennium 2009-2010, totalling \$12,752,400, is contained in annex I.

3. The proposed budget for 2009 represents an increase of 5.0 per cent in nominal terms over the approved budget for 2008, while the proposed budget for 2010 represents an increase of 3.4 per cent in nominal terms over the proposed budget for



2009. However, it may be noted that the United Nations inflation factor for 2009 is 3.2 per cent; the inflation projection of the Government of Jamaica for 2009-2010 is between 15 and 20 per cent. More than 10 per cent of the budget is subject to local inflation. Taking these factors into account, in real terms, the increase in the proposed budget for 2009-2010 is in the region of 3 per cent compared with the previous biennium.

4. It will be noted that the increase in the budget for the biennium 2009-2010 is mainly attributed to five objects of expenditure:

(a) **Communications.** Communication costs have consistently increased from year to year; the 2007 actual expenditure was 23 per cent over the 2007 approved budget for communication;

(b) **Training.** The United Nations budget provides training costs of at least 2 per cent of its staff-related costs; the Authority is proposing an increase of approximately 1 per cent of staff-related costs;

(c) **Information technology.** In keeping with developments in the information technology industry, the infrastructure of the Authority will have to be migrated to incorporate new developments and technological enhancements and discard obsolete technology. This will require an upgrade of some of its servers and related computer equipment, as well as training. Other costs are associated with the off-site hosting of the Authority website and electronic mail server, geographical information systems (GIS) upgrade and training, and migration to Windows Vista;

(d) **Building management.** Costs have been increased through the years, due mainly to electricity charges which are directly related to oil price increases. Security services have also increased by 17 per cent due to increases in Jamaica's minimum wage;

(e) **Conference service costs.** Actual conference servicing costs in 2006 and 2007 were 32 and 20 per cent more than the approved appropriations for those years. This was due to increases in United Nations-related costs, including meeting and documentation costs, as well as travel costs (increase in air fares, DSA and terminal expenses) for the United Nations meeting services team. These costs will continue to escalate with the increase in oil price and a weak United States dollar.

5. The proposed budget makes provision for the full costing of 35 established posts (19 at the Professional level and above and 16 at the General Service level). The two General Service posts that were frozen during the 2005-2006 financial period remain frozen for 2009-2010. One P-3 post has been reclassified to P-4 and one P-4 post to P-5, in consultation with the job classification unit of the Office of Human Resources of the United Nations Secretariat. The staffing table for the secretariat of the Authority is set out in annex II.

6. The proposed budget allows for one two-week session of the Authority in both 2009 and 2010. On the basis of the actual expenditure for the biennium 2007-2008, the requirement for conference-servicing costs for the next biennium is budgeted at \$2,130,400, representing an overall increase of \$517,500, or 32 per cent for the biennium.

7. In the report of the Secretary-General containing the programme of work for the Authority for the period 2008-2010 (ISBA/13/A/2), he proposed that during the 2008-2010 period the Authority would continue to focus on the implementation of

subparagraphs (c), (d), (f), (g), (h), (i) and (j) of paragraph 5 of section 1 of the annex to the 1994 Agreement, in particular the following main areas:

(a) The supervisory functions of the Authority with respect to existing contracts for exploration for polymetallic nodules;

(b) The development of an appropriate regulatory framework for the future development of the mineral resources of the Area, particularly hydrothermal polymetallic sulphides and cobalt-rich ferromanganese crusts, including standards for the protection and preservation of the marine environment during their development;

(c) Ongoing assessment of available data relating to prospecting and exploration for polymetallic nodules in the Clarion-Clipperton zone;

(d) The promotion and encouragement of marine scientific research in the Area through, inter alia, an ongoing programme of technical workshops, the dissemination of the results of such research and collaboration with Kaplan, the Chemosynthetic Ecosystem Group and the Seamounts Group;

(e) Information-gathering and the establishment and development of unique databases of scientific and technical information with a view to obtaining a better understanding of the deep ocean environment.

8. In addition, the Secretary-General noted that in the light of developments within the marine minerals sector, the Authority would begin to more closely monitor trends and developments relating to deep seabed mining activities, including world metal market conditions and metal prices, trends and prospects (paragraph 5 (d) of section 1 of the annex to the 1994 Agreement).

Ongoing assessment of available data relating to prospecting and exploration for polymetallic nodules in the Clarion-Clipperton zone

9. The activities to be undertaken by the Authority in this regard include further development of its Central Data Repository and the establishment of geological models and prospector's guides for mineral provinces of commercial interest in the Area, in particular polymetallic nodule deposits.

10. With regard to the Authority's Central Data Repository, it is proposed that, as part of the 2009-2010 work programme, its secretariat will continue to expand the Central Data Repository by augmenting the data already contained in it, thus generating products that provide a better indication of the possible resources of the Area and reflect the process under way in the Authority to establish reserves of metals in the mineral resources of the Area. In this regard, the structure of the database will be adjusted to cluster data and information by resource type, i.e., polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts, and by the relevant documents establishing a legal framework inclusive of environmental protection measures.

11. As part of the 2009-2010 work programme and in relation to the geological modelling of the polymetallic nodule provinces of commercial interest in the Area, the Secretary-General proposed that in addition to completing the work on a geological model of polymetallic nodule deposits in the Clarion-Clipperton fracture zone and a prospectors guide for that geographic area, the secretariat of the

Authority would initiate development of a similar model for the Central Indian Ocean basin.

Information-gathering and the establishment and development of unique databases of scientific and technical information

12. During the period 2009-2010, the secretariat of the Authority will continue to develop its environmental databases to cover the three mineral resources currently under consideration by the Authority: polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts. In relation to polymetallic nodules, the secretariat will continue to work with contractors and experts to assemble available public and private data and introduce them into the selected databases. Some of the methods to be utilized will include meetings of experts in the relevant fields and the establishment of cooperative arrangements with contractors and other private institutions for data exchange and for the establishment of data protocols. Efforts will be primarily geared to the Clarion-Clipperton zone and the Central Indian Ocean basin. However, public domain data will also be sought for other areas, such as the Peru basin. Outputs will include web-enabled bibliographic databases, a web-enabled environmental database linked to contractor and non-contractor databases, information notes on databases, and periodic reports to the Authority and its organs on the status of those databases.

Promotion and encouragement of marine scientific research in the Area through, inter alia, an ongoing programme of technical workshops, the dissemination of the results of such research and collaboration with Kaplan, the Chemosynthetic Ecosystem Group and the Seamounts Group

13. During 2009-2010, the Secretary-General proposes to convene two international workshops to review the geological model of polymetallic nodule deposits in the Clarion-Clipperton zone, its associated prospectors guide and a resource assessment of the metals of commercial interest that they contain; and to ascertain the modalities for scientific collaboration in research on cobalt-rich ferromanganese crusts deposits in the Area with a view to addressing the standardization requirements for the environmental data required for mining. A similar workshop on polymetallic sulphides deposits that was to have been convened in 2008 was postponed to facilitate the Authority's workshop on the progress that has been made in the development of mining and processing technologies for polymetallic nodules.

14. A workshop on the theme "Polymetallic nodule mining technology: current status and challenges ahead" was held in Chennai, India, from 18 to 22 February 2008 (see ISBA/14/LTC/___). The workshop established a cost model for a 1.5 million ton-per-year, 20-year integrated polymetallic nodule venture; on the basis of current metal prices and conservative estimates of capital expenditure and operational expenditure for the venture, it appeared to yield a very competitive internal rate of return. The workshop also laid the foundation for future possible collaboration among contractors, as well as between contractors for polymetallic nodule exploration and technology developers in other marine resource development fields. Finally, it better defined some of the areas (metal prices, riser applications and rates of return from relevant land-based sources for the metals contained in polymetallic nodules) that should be monitored by the Authority.

15. In his report (ISBA/13/A/2), the Secretary-General noted that the Authority has developed a practice of arranging technical briefings for the representatives of members of the Authority present in Kingston on matters relevant to the work of its Council and the Assembly. In an earlier report, he had also informed members of the Authority of the increased requests from members for regional briefings and seminars to heighten awareness of the work of the Authority and the progress achieved to date. An information seminar is planned for Nigeria in July 2008 and further such meetings are planned for the period 2009-2010.

III. Work programme and activities during the financial period 2009-2010

16. The work programme and activities for the period 2009-2010 are set out in detail in the report of the Secretary-General (ISBA/13/A/2).

A. Workshops and seminars

1. Workshops

17. It is proposed to convene two workshops and two seminars during the financial period. The first workshop will have as its objective to review the geological model of polymetallic nodule deposits in the Clarion-Clipperton zone and its associated prospectors guide; and to ascertain the modalities for scientific collaboration in research on cobalt-rich ferromanganese crusts deposits in the Area with a view to addressing the standardization requirements for the environmental data required for mining. To assist the secretariat of the Authority in preparing for the workshops, prior to each one a preparatory meeting of experts and scientists will be convened to develop a suitable agenda and to identify the major issues to be addressed. The outputs expected from the workshop to review the geological model of polymetallic nodule deposits in the Clarion-Clipperton zone and its associated prospectors guide will consist of:

- (a) A report of the preparatory meeting of scientists and specialists;
- (b) Publication of the proceedings of the workshop;
- (c) Publication of the prospectors guide for polymetallic nodule deposits in the zone;
- (d) Publication of the resource assessment of the metals of commercial interest in polymetallic deposits in the zone;
- (e) A geological model of polymetallic nodule deposits in the zone;
- (f) Recommendations for a programme of work to update, enhance and promote the geological model.

18. The outputs expected from the workshop to ascertain the modalities for scientific collaboration in research on cobalt-rich ferromanganese deposits in the Area with a view to addressing the standardization of environmental data for establishing environmental baselines for mining will consist of:

- (a) A report of the preparatory meeting of scientists and specialists;

(b) Publication of the proceedings of the workshop;

(c) Recommendations on standards for use by contractors during exploration to collect the biological, chemical, geological and physical data components of the marine environment essential for establishing environmental baselines and for environmental impact assessments.

2. Seminars

19. Two seminars will be convened by the Authority during the financial period. The objectives of the seminars include:

(a) To inform Government officials, marine policymakers and scientists at national and regional institutions of the work of the Authority;

(b) To promote the participation of scientists from institutions in developing countries in the marine scientific research being undertaken in the Area by international research organizations.

20. The Authority's contribution to the seminars will be limited to providing resource personnel (travel and daily subsistence allowance) at the seminars.

21. It is estimated that the amount of \$160,000 will be required to convene a workshop and a seminar each year. Workshop activities will comprise the convening of a preparatory meeting (10 participants), the actual workshop (25 participants) and the publication of the proceedings of the workshop.

B. Central data repository

22. During the financial period 2007-2008, work on the central data repository proceeded in a number of areas. In addition to the updating of depositary contents, a bathymetric geo-database for the Clarion-Clipperton zone was compiled that includes General Bathymetric Chart of the Oceans (GEBCO) data; grid data was provided by contractors; digitized paper maps were provided by the pioneer investors; a map interface with display functions for the available biological data was introduced on the Authority's website; and web-enabled maps of the ocean floor and its features showing mineral resource distributions and sampling locations on the ocean floor were completed. All of these products have been made available to the United Nations Atlas of the Oceans project. In addition, validation and editing of the data on cobalt-rich ferromanganese crusts have been completed and incorporated into the Central Data Repository. The database on polymetallic sulphides was updated with new data from International Cooperation in Ridge-crest Studies (InterRidge) and other researchers.

23. The costs associated with the central data repository during 2009 comprise \$5,000 for the web-enabled database on marine scientific research; \$10,000 for the web page on the geological model and the web-enabled bathymetric database; \$5,000 for the web-enabled maps of the ocean floor and its features; \$5,000 for collecting, validation and formatting of data on cobalt-rich ferromanganese crusts and polymetallic sulphides; \$5,000 for the acquisition of digital images of biota associated with polymetallic nodules and polymetallic sulphides; and \$5,000 for subscriptions to specialized online databases on deep sea fauna. During 2010, the requirements for the Central Data Repository will consist of \$5,000 for the

web-enabled database on the environmental and biological database; \$10,000 for the web-enabled maps of the different mineral provinces and resource distribution; \$10,000 for updating its inventory of patents issued for deep seabed exploration/mining/processing technologies; \$5,000 for the acquisition of digital images of biota associated with polymetallic nodules and cobalt-rich ferromanganese crusts; and \$5,000 for subscriptions to specialized online databases on deep sea fauna.

C. Geological model of polymetallic nodule deposits in the Clarion-Clipperton fracture zone and in the Central Indian Ocean basin

24. During the financial period, the Authority will continue its development of a geological model of polymetallic nodule deposits in the Clarion-Clipperton zone. It is anticipated that the project will be completed during the financial period. During the financial period, the Authority will also initiate work on a geological model of polymetallic nodule deposits in the Central Indian Ocean basin. As was the case with the geological model and the prospectors guide for polymetallic nodules in the zone, the Authority will call upon the services of scientists with expertise in such areas as sedimentation regimes; the calcium carbonate compensation depth in the basin and its relationship with nodule grade and abundance; nodule grade and abundance in the public domain and with contractors (especially India); and biological and environmental parameters of relevance to the model.

25. In 2009, the outputs expected from work on the geological model of polymetallic nodule deposits in the zone will consist of the proceedings of the 2009 workshop; the geological model of polymetallic nodule deposits in the zone; the prospectors guide; a resource assessment of the metals of commercial interest in polymetallic nodule deposits in the zone; and an update to the Authority's database on polymetallic nodules (POLYDAT), based on the data and information obtained from the programme.

26. In 2009-2010, the outputs expected from work on the geological model of polymetallic nodules in the Central Indian Ocean basin will consist of:

(a) A report on the meeting of experts and model developers on the programme;

(b) A report on the assembly and interpretation of additional data on nodule grade and abundance from the sole contractor in the basin and from the public domain;

(c) Reports on the assembly and interpretation of data on bathymetry, nodule morphology, sediment distribution, carbonate compensation depth, oxygen minimum zone, volcanism, tectonics, biological and other environmental parameters;

(d) Resource assessments, including the application of artificial neural networking and fuzzy logic techniques.

27. A report on progress in model development will be presented to the Legal and Technical Commission in 2010, and a mid-course review meeting will be convened to draw up an action plan for phase II and the completion of the programme.

28. During 2009, \$30,000 will be required to convene the meeting of experts on the Central Indian Ocean basin project; an additional \$35,000 will be required for consultancy services associated with data assembly and interpretation for this project. A further \$10,000 will be required to complete the geological model project for the Clarion-Clipperton zone. In 2010, \$30,000 will be required to convene the mid-course meeting on the Central Indian Ocean basin project; and an additional \$45,000 will be required for consultancy services associated with data integration and for resource assessments in this mineral province.

D. Promotion and encouragement of the conduct of marine scientific research

29. During 2009, \$30,000 will be required to convene a meeting of specialists and experts to review the products from the Authority's collaboration with the Global Census of Marine Life on Seamounts (CenSeam) with a view to ascertaining the subsequent steps required by the Authority to determine species distribution, gene flow and ways to protect species of limited distribution from the impacts of future mining; and an additional \$20,000 will be required to establish collaboration with the project on the biogeography of deep-water chemosynthetic ecosystems (ChEss) to obtain relevant information on fauna associated with polymetallic sulphides deposits in the Area. In 2010, \$30,000 will be required to further the collaboration with ChEss; and an additional \$20,000 will be required to initiate a project with CenSeam to determine species distribution and gene flow of species associated with cobalt-rich bearing crusts deposits on seamounts.

E. Information technology

30. For the financial period 2009-2010, information technology-related expenditure will include the cost of migrating information technology infrastructure to incorporate new developments and technological enhancements and to discard obsolete technology. The migration will require an upgrade of some of the hardware acquired in 2002-2004 and related training for the Authority's information technology and other personnel. The estimated cost of the upgrade of equipment and software is \$30,700 and the cost of training for both end-users and IT staff is estimated to be \$43,500 for the two-year period. Off-site hosting of the Authority's website and electronic mail server will require \$12,000 in 2009 and in 2010. Licensing fees for software, including Oracle, ACCPAC and GIS, will require a yearly fee of \$17,500.

IV. Scale of assessment for the contribution of members to the administrative budget

31. In accordance with the Convention and the Agreement, the scale of assessments for contributions to the administrative budget of the Authority is based on the scale of assessments for the regular budget of the United Nations, as adjusted to reflect the differences in membership between the Authority and the United Nations. For 2007 and 2008, the scale of assessments of the Authority was based on the scale of assessments for the regular budget of the United Nations for 2008. In

adopting the scale of assessments for that financial period, the Assembly and Council decided, on the recommendation of the Finance Committee, that the maximum assessment rate for the budget of the Authority should be 22 per cent and the minimum 0.01 per cent.

32. Since the scale of assessments for contributions to the budget of the Authority for 2009-2010 would be based on the scale of assessments for the regular budget of the United Nations for 2008, it is recommended that the maximum assessment rate for the budget of the Authority remain at 22 per cent, with the minimum rate remaining at 0.01 per cent.

33. It should be further noted that, in accordance with regulation 4.3 of the Financial Regulations of the International Seabed Authority, any balance from the appropriations for the previous financial period is to be surrendered. Accordingly, the Secretary-General applied \$450,000 as savings from the previous years' budgets to reduce assessed contributions for 2007-2008.

V. Status of the Working Capital Fund

34. The amount approved by the Assembly for the level of the Working Capital Fund is \$438,000. As at 29 February 2008, an excess of \$777 had been received and credited to miscellaneous income in accordance with financial regulation 6.3(c).

VI. Action to be taken by the Council and Assembly of the International Seabed Authority

35. The Secretary-General recommends to the Assembly of the International Seabed Authority the proposed budget for the financial period 2009-2010. The Assembly may wish to:

(a) Approve the budget for the financial period 2009-2010 in the amount of \$12,752,400, as proposed by the Secretary-General;

(b) Authorize the Secretary-General to establish the scale of assessments for the financial period 2009-2010 on the basis of the scale used for the regular budget of the United Nations for 2008, as adjusted by the Authority, taking into account that the maximum assessment rate for the budget of the Authority for 2009-2010 will be 22 per cent and the minimum 0.01 per cent;

(c) Authorize the Secretary-General to transfer part of the accumulated surplus from the previous financial period to reduce the amount of assessed contributions for 2009-2010;

(d) Authorize the Secretary-General, for 2009-2010, to transfer between appropriation sections up to 20 per cent of the amount in each section;

(e) Urge the members of the Authority to pay their assessed contributions to the budget for 2009, on time and in full, no later than 1 January 2009;

(f) Urge the members of the Authority to pay their assessed contributions to the budget for 2010, on time and in full, no later than 1 January 2010.

Annex I

Summary of budgetary requirements for the International Seabed Authority for the period 1 January 2009 to 31 December 2010

(Thousands of United States dollars)

	Approved for 2007-2008	2009	2010	Total for 2009-2010
Part I				
Administrative expenses of the secretariat				
Section 1				
Established posts	5 417.6	2 734.7	2 822.1	5 556.8
General temporary assistance	37.5	18.5	19.1	37.5
Overtime	45.3	22.4	22.9	45.3
Consultants	150.0	75.0	75.0	150.0
Promotion and encouragement of the conduct of marine scientific research	100.0	50.0	50.0	100.0
Ad hoc expert groups	320.0	160.0	160.0	320.0
Central data repository	70.0	35.0	35.0	70.0
Geological model	150.0	75.0	75.0	150.0
Common staff costs	2 264.1	1 152.0	1 188.9	2 340.9
Subtotal (section 1)	8 554.5	4 322.6	4 447.9	8 770.5
Section 2				
Official travel	285.6	150.4	155.2	305.6
Subtotal (section 2)	285.6	150.4	155.2	305.6
Section 3				
Communications	145.6	82.4	85.0	167.4
External printing	100.0	53.6	55.4	109.0
Training	52.1	38.5	39.7	78.2
Library books	100.0	51.7	53.3	105.0
Official hospitality	22.0	11.0	11.0	22.0
Acquisition of furniture and equipment	56.7	29.8	29.8	59.6
Rental and maintenance of furniture and equipment	23.0	12.4	12.8	25.2
Supplies and materials	80.3	40.2	40.1	80.3
Miscellaneous services	84.2	41.5	42.7	84.2

	<i>Approved for 2007-2008</i>	<i>2009</i>	<i>2010</i>	<i>Total for 2009-2010</i>
Information technology	80.9	50.9	82.3	133.2
Audit fees	34.6	17.3	17.3	34.6
Subtotal (section 3)	779.3	429.2	469.5	898.7
Section 4				
Building management	550.0	318.6	328.6	647.2
Subtotal (section 4)	550.0	318.6	328.6	647.2
Total (part 1, sections 1-4)	10 169.5	5 220.8	5 401.2	10 622.0
Part 2				
Conference-servicing costs of the Authority				
Conference services	1 612.9	1 048.4	1 082.0	2 130.4
Total (part 2)	1 612.9	1 048.4	1 082.0	2 130.4
Total administrative budget	11 782.4	6 269.2	6 483.2	12 752.4

Annex II

Staffing table of the Secretariat of the International Seabed Authority^a

<i>Functional title</i>	<i>Professional</i>	<i>General Service</i>
Secretary-General	1 (USG)	
Executive/Protocol Officer	1 (P-2)	
Administrative Assistant (New York office)		1
Deputy to the Secretary-General	1 (D-2) ^b	
Administrative Assistant		1
Legal Adviser	1 (D-1) ^b	
Senior Legal Officer	1 (P-5)	
Legal Officer	1 (P-4)	
Librarian	1 (P-3)	
Protocol/Administrative Assistant		1
Secretary		1
Senior Scientific Officer	1 (P-5)	
Scientific Officer (Marine Geologist)	1 (P-5) ^c	
Scientific Officer (Marine Biologist)	1 (P-4)	
Scientific Officer (Geostatistician)	1 (P-4)	
Scientific Officer (GIS)	1 (P-3)	
Marine Science Assistant		1
ICT Officer	1 (P-5) ^d	
Webmaster/Publications Officer	1 (P-4) ^e	
Database/IT Assistant		1
Executive Officer	1 (P-5)	
Secretary		1
Budget/Internal Oversight Officer	1 (P-4)	
Finance Officer	1 (P-4)	
Human Resources Officer	1 (P-3)	
Human Resources Assistant		1
Procurement Assistant		1
Budget & Treasury Assistant		1
Finance Assistant		1
Senior Security Officer	1 (P-2)	
Security Officer		1
Security Officer		1

<i>Functional title</i>	<i>Professional</i>	<i>General Service</i>
Driver		1
Driver		1
Driver		1
Total posts	19	16

- ^a Two General Service staff posts have been frozen for the time being.
^b It is proposed that these two posts be switched effective 1 January 2009.
^c Inadvertently reported as a P-4 instead of P-5 in the 2005-2006 budget.
^d Proposed reclassification from P-4 to P-5.
^e Proposed reclassification from P-3 to P-4.

**Council**

Distr.: General
8 April 2008

Original: English

Fourteenth session
Kingston, Jamaica
26 May-6 June 2008

**Review of outstanding issues with respect to the draft
regulations on prospecting and exploration for polymetallic
sulphides in the Area**

Prepared by the Secretariat

1. The purpose of the present paper is to update members of the Council on the outstanding issues with respect to the draft regulations on prospecting and exploration for polymetallic sulphides in the Area (ISBA/13/C/WP.1) in preparation for continued discussion of the regulations at the fourteenth session of the Authority.

I. Background and progress to date¹

2. The Council will recall that in 1998 the delegation of the Russian Federation had formally requested the Authority to develop regulations for prospecting and exploration for polymetallic sulphides and cobalt crusts. A workshop on these resources was held in June 2000, and in 2001 a document was placed before the Council (ISBA/7/C/2) summarizing the discussion at the workshop and indicating the considerations to be borne in mind in drafting regulations.

3. The Council then decided to request the Legal and Technical Commission to prepare draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich crusts. The Legal and Technical Commission, with assistance from the Secretariat, prepared such a draft in 2003 and 2004, which was subsequently considered by the Council during the eleventh session in 2005.

4. Following a first reading of the draft, the Council asked the Secretariat to clarify certain points, and the Secretariat submitted two technical information papers to the Council in 2006 (ISBA/12/C/2 and ISBA/12/C/3). At its 106th meeting, on 8 August 2006, the Council was provided with an oral briefing on the technical issues dealt with in those papers. The briefing was given by the Secretariat with the assistance of two technical experts, James Hein and Charles Morgan. In addition,

¹ For a chronology, with references to relevant documents, see annex II to the present document.



Mr. Morgan presented to the Council a report on the preliminary outcomes of a workshop on the technical and economic considerations relating to mining of polymetallic sulphides and cobalt-rich crusts, held from 31 July to 4 August 2006. At the request of the Council, a summary of the workshop recommendations was issued in the form of a document (ISBA/12/C/7). The delegation of the Russian Federation also submitted a draft proposal relating to the draft regulations (ISBA/12/C/6).

5. Following extensive discussion of the way in which the Council would address the outstanding technical issues with respect to the draft regulations, it was agreed that the Secretariat should attempt to revise the draft regulations further in the light of the outcomes of the technical workshop and the presentations, proposals and discussions in the Council during the twelfth session. In revising the draft, it was agreed that separate sets of regulations would be prepared for polymetallic sulphides and cobalt crusts. In considering the revised draft regulations, the Council recommended that priority be given to the regulations relating to polymetallic sulphides.

6. In accordance with the Council's request, the Secretariat prepared a set of draft sulphides regulations in October 2006. The draft was circulated to outgoing members of the Legal and Technical Commission, who were asked to submit their comments by 31 December 2006. Comments were received from three members of the Commission. In the light of those comments, the Secretariat prepared an explanatory note, annexing the revised draft sulphides regulations, for consideration by the Council in 2007 (ISBA/13/C/WP.1). Also in accordance with the Council's request, the Secretariat prepared separate draft regulations relating to cobalt-rich ferromanganese crusts for further consideration by the Legal and Technical Commission (ISBA/13/LTC/WP.1).

7. During the thirteenth session, following a general debate on the revised draft regulations on prospecting and exploration for polymetallic sulphides and briefing by an expert, Mark Hannington, on global exploration models for polymetallic sulphide deposits in the Area, the Council completed a detailed reading of regulations 1 to 43 and agreed on revisions to some of those regulations. Also during the thirteenth session, the Legal and Technical Commission began consideration of the draft regulations relating to cobalt-rich ferromanganese crusts prepared by the Secretariat. The Commission focused its consideration on two issues: the size of the area to be allocated for exploration and the progressive fee system, but considered that the background information available to date was not sufficient to provide a recommendation to the Council on any given system for site allocation for prospecting and exploration. It agreed to continue its work during the fourteenth session.

8. The discussions in the Council, and the revisions that were agreed upon, at the thirteenth session focused primarily on the provisions in the draft regulations dealing with the protection and preservation of the marine environment. There was little discussion of the key outstanding issues, namely, the formula for determining the size of the exploration area, the introduction of a progressive fee system for exploration and the schedule of relinquishment. At the conclusion of the session, an informal text (in English) of the agreed revisions (ISBA/13/C/CRP.1) was provided to all delegations. The Council further agreed that the pending draft regulations (regulations 1(3), 12, 16, 19(2)(a), 21, 24(2), 27, 28(2), 33(2), 35, 36(2) and (3) and

38) would be taken up by the Council in 2008, together with a proposal to insert a review clause.

II. Outstanding issues

9. To date, neither the Council, in relation to polymetallic sulphides, nor the Legal and Technical Commission, in relation to cobalt-rich crusts, has been able to make significant progress with respect to the key substantive issues outlined in the explanatory note to document ISBA/13/C/WP.1. These include:

- (a) The formula for determining the size of the exploration area for polymetallic sulphides;
- (b) The introduction of a progressive fee system for exploration;
- (c) The schedule of relinquishment;
- (d) The system for participation by the Authority.

10. In addition, the delegation of France, supported by those of Honduras, Germany and Spain, suggested that, in the light of the inadequate scientific and technical knowledge relating to polymetallic sulphides, the regulations should contain a review clause in the light of improved knowledge. The Secretariat was asked to provide a draft of such a provision, taking into account the discussions in the Council.

11. Although some adjustments had been proposed to the draft regulations contained in ISBA/13/C/WP.1 in the light of the recommendations that emerged from the Authority's workshop on technical and economic considerations relating to mining polymetallic sulphides and cobalt-rich crusts, it appeared that the proposed adjustments, particularly those relating to the size of areas for exploration, did not fully meet the expectations of members of the Council. Furthermore, it was apparent that the three core elements of the proposed regime: namely, the question of the fees to be paid by contractors in return for exclusive exploration rights, the formula for determining the size of exploration areas and the schedule for relinquishment, are so closely interlinked that they need to be considered as a package.

12. The present paper therefore reviews the issues involved with respect to the three core elements of the regime and presents further revised suggestions for discussion in relation to the draft regulations. Although the paper discusses the issues in relation to polymetallic sulphides, it is suggested that the principles involved are of equal relevance to the regime for exploration for cobalt-rich crusts and that the discussion may also be of assistance to the Legal and Technical Commission in its further consideration of regulations relating to exploration for cobalt-rich crusts.

A. Size of the exploration area for polymetallic sulphides

13. Discussions to date suggest that, in the case of polymetallic sulphides, the appropriate size for each exploration block would be 100 square kilometres (km²), configured as a square measuring 10 kilometres by 10 kilometres (km). Although the possibility of using rectangular blocks had also been raised, it would appear that

the preferred option, for reasons of technical and administrative convenience, would be to use a grid system (in this case corresponding to block sizes of approximately 10 km x 10 km each (0.1 x 60 nautical miles x 1.852 km = 11.11 km grid spacing).

14. In order to provide contractors with adequate opportunities for multi-year exploration, it would be necessary to permit applications for multiple blocks. The technical studies prepared for the Authority to date suggest that up to 100 blocks would be needed to cover the permissive areas in which polymetallic sulphides occur. The remaining issue is whether such blocks should be contiguous or non-contiguous. In the original draft of the regulations, it was proposed that exploration areas should consist of a maximum of 100 contiguous blocks (a block being considered contiguous where it touches another block at any point). The reason for this requirement was the concern that allowing a contractor to select non-contiguous blocks would enable "cherry-picking" of prospective sites along mid-ocean ridges to occur in such a way as to exclude other potential contractors. However, further technical study suggests that, while there should be some broad geographical limit on proximity, "splitting the exploration areas into clusters of non-contiguous blocks would be required in order to ensure that the final clusters can be spread over a large enough area to contain such resources".²

15. For these reasons, it is suggested that contractors should be allowed to organize exploration blocks into clusters. An appropriate formula might be to require at least five clusters of contiguous blocks where each cluster must contain not less than five blocks. This would permit a maximum configuration of 20 clusters of five blocks or a minimum configuration of five clusters of 20 blocks. Some suggested that limits on proximity of clusters might include a requirement that all blocks be located within a 5° square (although this may be cumbersome because 1° of latitude at the equator is significantly different from 1° of latitude at 80°N), or a more straightforward, but less precise, requirement that all blocks be located within "the same geographical area".

16. There seems to be no disagreement with the proposal (which is consistent with the advice of technical experts) that the final exploitation area should be up to 2,500 km² made up of self-selected sub-blocks of any size, which need not be based on the original block allocation.

B. Application fees

17. The initial draft of the proposed regulations for exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts included provision for the payment of an administrative fee of \$250,000 for each application for a plan of work for exploration. This provision was taken directly from the corresponding regulation relating to exploration for polymetallic nodules (ISBA/6/A/18, annex).

18. In the case of polymetallic nodules, each applicant for approval of a plan of work for exploration is required to pay a single fee of \$250,000. In accordance with regulation 19, this fee represents the administrative cost for processing the

² Study prepared by Mark Hannington and Thomas Monecke, of the University of Ottawa, 21 June 2006, "Global Exploration Models for Polymetallic Sulphide Deposits in the Area: possible criteria for lease block selection and the draft regulations on prospecting and exploration for polymetallic sulphides.

application and is to be reviewed from time to time by the Council in order to ensure that it covers the administrative costs incurred by the Authority in processing the application. The figure of \$250,000 was taken from the 1994 Agreement (annex, section 8, para. 3), which provides that with regard to the implementation of annex III, article 13, paragraph 2, of the Convention, the fee for processing applications for approval of a plan of work limited to one phase, either the exploration phase or the exploitation phase, shall be \$250,000. It will be recalled in this regard that Annex III of the Convention provides for the payment of a fee of \$500,000 for each phase. It will also be recalled that annex III, article 13, paragraph 3, of the Convention (which, by reason of the Agreement, no longer applies) also provided for the payment of an annual fixed fee of \$1 million from the date of entry into force of the contract. Part of this fee would also cover the ongoing administrative costs incurred by the Authority in supervising contracts for exploration. It is important to note that these ongoing costs are not covered under the present regime for nodules.

19. The figure of \$250,000 in the 1994 Agreement and in the nodules regulations was chosen to be consistent with resolution II of the Third United Nations Conference on the Law of the Sea, paragraph 7 of which provided that the initial fee for registration as a pioneer investor would be \$250,000, with a further fee of \$250,000 to be paid upon application for a plan of work for exploitation in accordance with the Convention.

20. During the Authority's 2006 workshop on technical and economic considerations relating to mining polymetallic sulphides and cobalt-rich crusts, a number of adjustments were suggested, particularly in relation to the sizes of area to be allocated for exploration and the application fee for exploration. Those recommendations were elaborated and explained in document ISBA/12/C/7. In essence, it was suggested that, in order to provide the necessary incentives for the development of seabed mineral resources, exploration areas should be allocated according to a block system and that along with the introduction of the block system, an alternative should be provided to the single upfront application fee of \$250,000. That alternative system should allow contractors to pay a lower initial application fee, combined with an annual fee in respect of each exploration block. The annual fee would increase over time in order to provide an incentive to contractors to proceed more rapidly to relinquish unused blocks and develop the resources (a so-called "progressive fee" system).

21. The scheme recommended by the 2006 workshop was reflected in the revised draft of the proposed regulations provided to the Council in 2007 (ISBA/13/C/WP.1, para. 11). However, taking into account the decision of the Council to proceed to draft regulations for sulphides and crusts separately, there remains a need to consider how the scheme could be applied in detail to each of these two resources.

C. Progressive fee system applied to polymetallic sulphides

22. The idea of a variable or progressive fee per block comes from well-established terrestrial and offshore licensing systems where periodic increases in fees for retaining blocks acts as an incentive for more rapid relinquishment and, thus, development of the resources. This factor was considered particularly

important by the 2006 workshop participants as a mechanism for promoting the development of seabed mineral resources.

23. Many nations levy a fee on economic activities that use land (including offshore lands) in some way, and in many instances this includes mineral sector activities. Such fees are usually based on area and are calculated by multiplying some standard rate for that type of activity times the land area being used for that activity. The rates that are charged vary widely, but are generally small in comparison to the take derived from profit- or income-based taxes during the mining phase of the operation. There are two arguments for this. First, a large surface rental fee that is paid irrespective of profit level would tend to harm mines subject to cyclical price fluctuations. Second, during the exploration phase, the larger the proportion of investors' funds that go towards exploration, the better the chances that an ore body, and a taxable mine, will be located. On the other hand, the fee should be more than nominal. Again, two arguments can be made for this. First, the imposition of a fee will dissuade speculators from taking up ground and blocking out legitimate explorers. Second, as noted above it also is a good mechanism to generate an additional incentive to pursue exploration with due diligence. It is suggested that this is particularly relevant in the case of deep seabed mining because it is apparent that the system currently applicable in the case of polymetallic nodules provides no incentive to contractors to develop resources, but on the contrary provides an incentive to occupy potentially mineable areas, to the exclusion of others, until such time as economic conditions may prove more favourable.

24. The progressive fee option offers a number of potential benefits to the Authority and to contractors. The Authority would benefit from a progressive fee because it would mean that administrative costs could be absorbed and disbursed more easily within the existing budgetary framework. Contractors would benefit because they would not be required to pay a large upfront cost. In addition, if the progressive fee system was combined with the possibility of a more flexible system of relinquishment, contractors would have the opportunity to further reduce exploration costs.

D. Amount of the fee

25. The next critical question is the amount of the fee. Usually, one would expect the progressive fee to be placed at a level which provides the contractor with an incentive to pay by instalments. This suggests that the Authority should offer a progressive fee option at a moderate discount to the fixed fee, combined with the possibility of a more aggressive schedule of relinquishment.

26. The fixed fee is currently \$250,000. However, it should be noted that this figure was established in 1983, or even before that during the negotiations leading to the adoption of the Convention. At 1983 values, \$250,000 is worth in excess of \$400,000 today, which strongly suggests that the fixed fee should be increased at least in line with the changes in the value of money.³ However, based on the experience to date with respect to exploration for polymetallic nodules, there are other objective reasons for increasing the fee in real terms, including the need to

³ As of 1 January 1983, the index value of the United States dollar was 117.91. As of 31 March 2008, the index value was 71.76, which means that the equivalent value of \$250,000 today, without applying any other factors, is approximately \$410,780.

encourage due diligence by contractors, and, as proposed by the Legal and Technical Commission, the need to reflect the cost of ecosystem services provided by the Authority.⁴ The ecosystem services included in the Area have not so far been evaluated, but would include, for example, the benefits of avoiding loss of biodiversity.

27. All these factors together would suggest that an appropriate level for the fixed fee would be from about \$500,000 to \$750,000. Furthermore, this should be applicable to all new applications for exploration for any type of resources, whether polymetallic nodules, polymetallic sulphides or cobalt-rich crusts.

28. If the fixed fee were to be set at, for example, \$500,000, the total progressive fee payable over 15 years should amount to a maximum of \$800,000.⁵ This would be paid in the form of a modest initial payment, followed by an annual fee based on the total number of square kilometres retained by the contractor. The total annual fee payable would be commensurate with the total area retained. As illustrated in the table below, the initial payment is \$50,000. Thereafter, an annual fee is applied, based on the number of square kilometres retained multiplied by a factor. The factor is set at \$5 during the first five years of the contract, increasing to \$10 for the second five years and \$20 for the third period of five years. Square kilometres are used to define the area retained, rather than blocks, to allow the contractor greater flexibility in relinquishing parts of blocks in the form of sub-blocks.

Illustration of progressive fee system

Contractor	Year	Upfront payment	Fee years 0-5	Fee years 6-10	Fee years 11-15	Total fee payable
XXXXX	1	50 000	50 000	—	—	100 000
	2	—	50 000	—	—	50 000
	3	—	50 000	—	—	50 000
	4	—	50 000	—	—	50 000
	5	—	50 000	—	—	50 000
	6	—	—	50 000	—	50 000
	7	—	—	50 000	—	50 000
	8	—	—	50 000	—	50 000
	9	—	—	50 000	—	50 000
	10	—	—	50 000	—	50 000
	11	—	—	—	50 000	50 000
	12	—	—	—	50 000	50 000
	13	—	—	—	50 000	50 000
	14	—	—	—	50 000	50 000
	15	—	—	—	50 000	50 000
		50 000	250 000	250 000	250 000	800 000

⁴ Payment for ecosystem services (PES) is the generic name of a variety of arrangements through which the beneficiaries of ecosystem services pay back to the providers of those services.

⁵ The actual future value of \$500,000 at 4 per cent over 15 years is \$900,000.

E. Schedule of relinquishment and treatment of exploration costs

29. As noted above, to derive the maximum benefit from the progressive fee system, it would be necessary also to modify the current relinquishment schedule to allow for more rapid relinquishment of unwanted acreage. The current fixed schedule for polymetallic nodule exploration, which is based, necessarily, on the pioneer regime, provides no incentive to carry out more rapid exploration. In the case of polymetallic sulphides, it is suggested that the relinquishment provisions should be adjusted to allow contractors to relinquish sub-blocks, of any size, at any time. Such sub-blocks would be designated by the contractor in order to enable the contractor to delineate its final exploration area at the finest possible scale.

30. Another way in which Governments commonly provide incentives to the mining industry is by establishing special provision for the tax treatment of exploration expenses incurred before taxable income is available. In this way, the need for costly exploration programmes preceding the start-up of a mine can be recognized. This concept has been recognized in the regulations for polymetallic nodules, where the standard terms of contract suggest that actual exploration expenditures, declared in annual reports, may be set off against the eventual profits from mining, although this would need to be developed further in the context of regulations governing exploitation.

31. Although a system giving credit for actual and direct exploration costs is reasonable in a situation where the likely costs and time frame for exploration are known, it may be less appropriate in the case of exploration for deep seabed resources. In the case of polymetallic nodules, for example, it has become evident that there are very large disparities in the amounts being spent on exploration by each contractor. In some cases, the expenditure reported in annual reports is greatly in excess of the expenditure proposed in the original programme of activities. Furthermore, for nearly all contractors, the exploration phase has continued far longer than originally intended. Most of the exploration that is being carried out is not being conducted on a commercial basis but as long-term, government-funded research. If this situation is to continue, it is important that some form of limitation is placed on the level of the expenses that contractors may take into account as legitimate exploration expenses. Without any such limitation, the incentive is to continue open-ended research indefinitely, which would eventually be paid for out of royalties that would otherwise accrue to the benefit of the Authority for distribution to mankind.

F. Review clause

32. In the light of the discussions in the Council during the thirteenth session, a proposed review clause has been drafted for consideration by the Council. Since the concern of the Council was to be able to review the Regulations in the light of improved knowledge of the resources, including their environment, it is suggested that there be provision for an automatic review, five years following the approval of the Regulations by the Assembly. The Council would then be able to make such revisions to the Regulations as may be necessary in the light of any new or improved knowledge. However, since the standard terms of contracts already provide a mechanism for making revisions to the contract, any such amendments to

the Regulations would be without prejudice to the rights conferred on any contractor under the provisions of a contract in force at the time of any such revision.

33. At the same time, it is suggested that the review clause also permits a contractor which has entered into a contract for exploration for polymetallic sulphides to request the Council to consider revisions to these Regulations if, in the light of improved knowledge or technology, it becomes apparent that the Regulations are not adequate to enable the contractor to carry out exploration effectively and efficiently. Such a situation may arise, for example, where the contractor finds that the area allocated for exploration is inadequate to enable it to develop a prospective mine site.

III. Recommendations

34. The Council is invited to note the background to the development of the draft regulations on prospecting and exploration for polymetallic sulphides and the progress to date. With respect to the outstanding issues identified in the present paper, the Council is invited to address these matters during the fourteenth session and to consider the issues of the area for exploration, fees and the schedule for relinquishment on the basis of the suggested revisions to ISBA/13/C/WP.1, set out in annex I to the present document.

35. Although the issues raised in the present paper are complex, they all have previously been presented to the Council on a number of occasions. They have also been the subject of discussion in both the Legal and Technical Commission and in the Council. Technical information and briefings have been provided on these issues and updated on a number of occasions.

36. Notwithstanding the complexity of the subject matter, in order for the Council to make further progress on the draft regulations, there are a number of decisions that need to be taken, as follows:

- (a) Whether to adopt the block system for allocation of exploration areas as presented in annex I;
- (b) Whether to adopt the proposed adjustments to the system for relinquishment outlined in the present paper and annex I;
- (c) Whether to adopt the proposed progressive fee system outlined in the present paper and annex I;
- (d) Whether to adopt the revised fee levels as proposed in the present paper;
- (e) Whether to adopt the review clause proposed in annex I.

Annex I

Suggested possible revisions to relevant provisions in ISBA/13/C/WP.1

Regulation [12]

Total area covered by the application (polymetallic sulphides)

1. For the purposes of these Regulations, a "polymetallic sulphide block" means a cell of a grid as provided by the Authority, which shall be approximately 10 kilometres by 10 kilometres and no greater than 100 square kilometres.
2. The area covered by each application for approval of a plan of work for exploration for polymetallic sulphides **shall be comprised of not more than 100 polymetallic sulphide blocks, which shall be arranged by the applicant in at least five clusters, as set out in paragraph 3 below.**
3. **Each cluster of polymetallic sulphide blocks shall contain at least five contiguous blocks.** Two such blocks that touch at any point shall be considered to be contiguous. Clusters of polymetallic sulphide blocks need not be contiguous but shall be proximate and located within the same geographical area.
4. Notwithstanding the provisions in paragraph 2 above, where an applicant has elected to contribute a reserved area to carry out activities pursuant to article 9 of annex III to the Convention, in accordance with regulation 17, the total area covered by an application shall not exceed 200 polymetallic sulphide blocks. Such blocks shall be arranged in two groups of equal estimated commercial value and each such group of polymetallic sulphide blocks shall be arranged by the applicant in clusters, as set out in paragraph 3 above.

Regulation [21]

Fee for applications (polymetallic sulphides)

1. The fee for processing a plan of work for exploration for polymetallic sulphides shall be:
 - (a) A fixed fee of **500,000 United States dollars** or its equivalent in a freely convertible currency, payable by the applicant at the time of submitting an application; or
 - (b) At the election of the applicant, a fixed fee of **50,000 United States dollars** or its equivalent in a freely convertible currency, payable by the applicant at the time of submitting an application, and an annual fee calculated as set out in paragraph 2.
2. **The annual fee shall be calculated as follows:**
 - (a) **Five United States dollars multiplied by the area factor from the date of the first anniversary of the contract;**
 - (b) **Ten United States dollars multiplied by the area factor from the date of the first relinquishment in accordance with regulation 27(2); and**

(c) Twenty United States dollars multiplied by the area factor from the date of the second relinquishment in accordance with regulation 27(3).^a

3. The "Area factor" means the number of square kilometres comprised in the exploration area at the date upon which the periodic payment in question becomes due.

4. The amount of the fee shall be reviewed from time to time by the Council in order to ensure that it covers the administrative costs incurred by the Authority in processing the application.

Regulation [27]

Size of area and relinquishment

1. The contractor shall relinquish the area allocated to it in accordance with paragraphs 2, 3 and 4 of this regulation. **Areas to be relinquished need not be contiguous and shall be defined by the contractor in the form of sub-blocks comprising one or more cells of a grid as provided by the Authority.**

2. By the end of the fifth year from the date of the contract, the contractor shall have relinquished at least 50 per cent of the original area allocated to it.

3. By the end of the tenth year from the date of the contract, the contractor shall have relinquished at least 75 per cent of the original area allocated to it; or

4. At the end of the fifteenth year from the date of the contract, or when the contractor applies for exploitation rights, whichever is earlier, the contractor shall nominate an area from the remaining area allocated to it to be retained for exploitation.

5. **The contractor may at any time relinquish parts of the area allocated to it in advance of the schedule set out in paragraphs 2, 3 and 4 above.**

6. Relinquished areas shall revert to the Area.

7. The Council may, at the request of the contractor, and on the recommendation of the Commission, in exceptional circumstances, defer the schedule of relinquishment. Such exceptional circumstances shall be determined by the Council and shall include, inter alia, consideration of prevailing economic circumstances or other unforeseen exceptional circumstances arising in connection with the operational activities of the Contractor.

Regulation [44]

Review

1. Five years following the approval of these Regulations by the Assembly, the Council shall undertake a review of the manner in which the Regulations have operated in practice. In the light of the review, the Council may revise any of the provisions of these Regulations, without prejudice to the rights conferred on any contractor with the Authority under the provisions of a contract entered into pursuant to these regulations in force at the time of any such revision.

^a The 2006 workshop recommended that the fee per block retained should double in the event of an extension of the contract for exploration beyond 15 years, pursuant to regulation 28.

2. A contractor which has entered into a contract for exploration with the Authority pursuant to these Regulations may at any time request the Council to consider revisions to these Regulations if, in the light of improved knowledge or technology, it becomes apparent that the Regulations are not adequate to enable the contractor to carry out exploration effectively and efficiently. In the event that any provisions of these Regulations are amended following such request and consideration by the Council, the Contractor and the Authority may revise the contract in accordance with section 24 of annex 4.

Annex II

Chronology of the development of the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area

<i>Year</i>	<i>Event</i>	<i>Reference</i>
1998	Russian Federation requests the Authority to develop regulations for prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts.	ISBA/4/A/18
2000	The Authority convenes an international scientific workshop on the status and prospects for seabed minerals other than polymetallic nodules.	Kingston, Jamaica, 26-30 June 2000
2001	Following the adoption in 2000 of the regulations for prospecting and exploration for polymetallic nodules, the Secretariat presents a report to the Council on considerations relating to the regulation of prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts, including a summary of the outcomes of the 2000 workshop and draft model clauses.	ISBA/7/C/2
	Council decides to continue its consideration of the issues at the next session and requests the Secretariat to provide additional background information. Decides also that the Legal and Technical Commission should commence consideration of the regulations.	ISBA/7/C/7
2002	A one-day technical seminar takes place during the eighth session of the Council in order to provide members of the Council with additional information about polymetallic sulphides and cobalt-rich ferromanganese crusts and the marine environment in which they occur.	ISBA/8/A/1 and Corr.1 ISBA/8/C/7
	Legal and Technical Commission begins consideration of the issues associated with the proposed regulations.	ISBA/8/C/6*
2003	Legal and Technical Commission meets for two weeks. During the first week, informal working groups are convened for detailed consideration of specific technical issues.	ISBA/9/C/4

<i>Year</i>	<i>Event</i>	<i>Reference</i>
	The Secretariat is asked to prepare a consolidated draft of the regulations, taking into account the discussions from 2002 and 2003.	
2004	Legal and Technical Commission completes its work on the draft regulations and submits the outcome of its work to the Council. The Council has insufficient time for substantive consideration of the draft.	ISBA/10/C/WP.1 ISBA/10/C/10
2005	The Council undertakes a first reading of the draft prepared by the Legal and Technical Commission. As a result, the Council identifies substantive issues for further consideration and requests the Secretariat to prepare a revised text incorporating minor revisions arising from the first reading.	ISBA/10/C/WP.1/Rev.1* ISBA/11/C/5 (explanatory notes)
2006	(March) The Authority convenes an international scientific workshop on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna.	Kingston, 26-31 March 2006
	(July) Immediately prior to the twelfth session, the Authority convenes an international workshop on technical and economic considerations relating to mining of polymetallic sulphides and cobalt-rich ferromanganese crusts. A summary of the workshop recommendations is presented to the Council.	ISBA/12/C/7
	(August) During the twelfth session, the Council resumes consideration of the draft regulations. The Secretariat provides additional clarification on critical issues as requested by the Council and provides a technical briefing with the assistance of experts.	ISBA/12/C/2 ISBA/12/C/3 ISBA/10/C/WP.1/Rev.1*
	Russian Federation submits a draft proposal relating to the draft regulations.	ISBA/12/C/6
	By the end of the twelfth session, the Council decides to request the Secretariat to further revise the draft regulations in the light of the outcomes of the technical workshop and of the presentations, proposals and discussions of the Council. The Council decides further that separate sets of	ISBA/12/C/12

<i>Year</i>	<i>Event</i>	<i>Reference</i>
	regulations will be prepared for polymetallic sulphides and cobalt-rich ferromanganese crusts, and that the draft regulations on polymetallic sulphides should be circulated to the members of the Legal and Technical Commission before the end of 2006, so that the Council can be in a position to give substantive consideration to them in 2007.	
	(October) Secretariat distributes draft regulations on polymetallic sulphides to members of the Legal and Technical Commission. Comments requested by 31 December 2006.	
2007	(March) Secretariat prepares a revised draft of the regulations on polymetallic sulphides, together with an explanatory memorandum, taking into account the comments received from members of the Legal and Technical Commission.	ISBA/13/C/WP.1
	(July) During the thirteenth session, the Council conducts a detailed examination of draft regulations 1 to 43 in document ISBA/13/C/WP.1 and agrees on revisions to some regulations. An informal text (in English) of the agreed revisions is provided to all delegations. The Council agrees to take up draft regulations 1(3), 12, 16, 19(2)(a), 21, 24(2), 27, 28(2), 33(2), 35, 36(2) and (3) and 38 in 2008.	ISBA/13/C/CRP.1 ISBA/13/C/7
	(July) Legal and Technical Commission begins consideration of the draft regulations for cobalt-rich ferromanganese crusts prepared by the Secretariat. The Commission focuses its consideration on two sensitive issues: the size of the area to be allocated for exploration and the progressive fee system, but considers that the background information available to date is not sufficient to provide a recommendation to the Council on any given system for site allocation for prospecting and exploration.	ISBA/13/LTC/1 and ISBA/13/LTC/WP.1



Council

Distr.: General
9 April 2008

Original: English

Fourteenth session
Kingston, Jamaica
26 May-6 June 2008

Election to fill a vacancy on the Legal and Technical Commission in accordance with Part XI, section 4, subsection C, article 163, paragraph 7, of the United Nations Convention on the Law of the Sea

Note by the Secretary-General

1. The Council is invited to note that Michael Wiedicke-Hombach (Germany), member of the Legal and Technical Commission, has resigned. Mr. Wiedicke-Hombach was elected a member of the Commission on 14 August 2006 (see ISBA/12/C/11), for a term of five years beginning 1 January 2007.
2. In accordance with article 163, paragraph 7, of the United Nations Convention on the Law of the Sea and rule 80, paragraph 3, of the Rules of Procedure of the Council of the International Seabed Authority, in the event of the death, incapacity or resignation of a member of the Commission prior to the expiration of his or her term of office, the Council shall elect for the remainder of the term a member from the same geographical region or area of interest.
3. Article 163, paragraph 3, of the Convention and rule 81 of the Rules of Procedure of the Council provide that members of the Commission shall have appropriate qualifications in the area of competence of the Commission, and States parties shall nominate candidates of the highest standards of competence and integrity with qualifications in the relevant fields so as to ensure the effective exercise of the functions of the Commission.
4. By a letter dated 8 April 2008, the Permanent Mission of Germany to the Authority informed the secretariat of the Authority of the nomination of Christian Reichert, head of the Geophysical subdivision of the Federal Institute for Geosciences and Natural Resources, as a candidate to fill the vacant seat on the Commission. The curriculum vitae of Dr. Reichert appears in the annex to the present document.



Annex

Curriculum vitae^a

Christian Jürgen Reichert (Germany)



Name:	Dr. Reichert	Affiliation: Bundesanstalt für
Given names:	Christian Jürgen	Geowissenschaften
Marital status:	married	und Rohstoffe (BGR)
Date of birth:	12 April 1951	Stilleweg 2
Place of birth:	Berlin, Germany	D-30699 Hannover
Nationality:	German	Tel.: +49-511-639-2244
Present position:	Sub-Division Head:	Fax: +49-511-639-2063
	Geophysical	e-mail: christian.reichert@bgr.de
	Research	web-site: www.bgr.bund.de

At present

Head of sub-division „Geophysical Research“ with the Federal Institute for Geosciences and Natural Resources (BGR).

- Management of the running tasks of the sub-division (staff of approximately 70 scientists and technicians), staff and budget planning. This includes Marine Geophysics with comprehensive instrumentation for operations world-wide (reflection and refraction seismics, magnetics, gravity, geothermics), an airborne technical service with a helicopter completely fitted with electromagnetics, magnetics, radiometry (airborne gravity and airborne radar under development), the German Seismological Central Observatory in Erlangen, the National Data Center fulfilling the German tasks within the frame of the Comprehensive Test Ban Treaty (CTBT) of the United Nations (UN) with its seismic and infrasound monitoring stations, as well as Applied Geophysics with various electromagnetic methods, gravity and geothermics.
- Deputy Division Head (B3: Geophysics, Marine and Polar Research) with approximately 140 scientists and technicians).
- Conception and implementation of and cooperation in interdisciplinary research projects in the marine sector (generally of international character), application for third party funds (e.g. Federal Ministry of Education and Research: marine research with RV SONNE). As in the earlier position, the principle tasks are contributions to assessing the potential in natural resources and the georisk potential of selected active and passive continental margins. This includes the study of basic geological-tectonic processes active during continental margin formation.
- Conception and implementation of third party funded projects as well as cooperation with private industry companies.

CV Dr. Christian Reichert, as of December 2007

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^a Reproduced in the original language of submission.

- Until March 2007 coordinator for the subject "Investigation of the Seas and Polar Regions" within the Development and Research Board of BGR.
- Scientific issues within the frame of implementing Article 76 of the United Nations Convention on the Law of the Sea (delineation of the limits of the continental shelf), German candidate for the elections to the UN Commission on the Limits of the Continental Shelf in June 2007.
- Project-Controlling for the division „Geophysics, Marine and Polar Research“.
- Chief-scientist on four marine-geoscientific expeditions with scientific staff of ca. 18 persons for investigations on the continental margins off Costa Rica, Tasmania, Chile and Mozambique.

1993 - 1999

Head of Sub-Division „Marine Geophysics, Polar Research“ with the Federal Institute for Geosciences and Natural Resources (BGR).

- Management of the running tasks of the sub-division (staff of approximately 50 scientists and technicians), staff and budget planning including the geological-geophysical expeditions to the arctic and Antarctic regions. The latter are realized about bi-annually, and are of high logistical complexity and costs. They involve intense cooperation with other national and international research groups. (polar budget comprises approximately 2.2 Mio Euro per fiscal year).
- Conception and implementation of, as well as participation in interdisciplinary research projects in the marine and polar sector sector, application for third party funds (e.g. Federal Ministry of Education and Research: marine research with RV SONNE). Principle tasks are contributions to assessing the potential in natural resources and the geo-risk potential of selected active and passive continental margins. This includes the study of basic geological-tectonic processes active during continental margin formation.
- Co-ordinator for the working field "Geo risk" within the Research Board of BGR.
- Chief-scientist on five marine-geoscientific expeditions with scientific staff of ca. 18 persons for investigations of the continental margins of East Siberia (Arctic Ocean), Chile, Queen Maud Land (Antarctica), Namibia, Indonesia as well as of the oceanic crust of the Angola Basin. Co-Chief Scientist on two other expeditions: Arabian Sea and Indian Ocean (Ninetyeast Ridge).

1992 - 1993

Scientific employee with the Geological Survey of Lower Saxony (NLFB): Acquisition, processing and interpretation of shallow-seismic data.

- 1992 Doctorate thesis: Ein geophysikalischer Beitrag zur Erkundung der Tiefenstruktur des Nordwestdeutschen Beckens längs des refraktionsseismischen Profils NORDDEUTSCHLAND 1975/76 (A geophysical contribution to the investigation of the deep structure of the Northwest German Basin along the seismic refraction profile NORDDEUTSCHLAND 1975/76) with focus on seismic and gravimetric methods and modelling.
- 1983 - 1991 Manager assistant for the German Continental Seismic Refraction Profiling (Deutsches Kontinentales Refraktionsseismisches Programm, DEKORP) with the NLR. Management of comprehensive geo-scientific projects for investigation of the deep Earth's crust in Germany using various methods with focus on the seismic refraction method. Total budget approximately ca. 2 Mio. Euro per year, one scientist, one technician, own seismic refraction equipment and operation.
- Conception, organisation, realization and evaluation of the particular sub-projects, incl. call for tenders, commissioning contractors for the main field work and supervision of implementation,
 - Organisation of annual status workshops as well as of an international symposium („Deep Seismic Profiling of the Continental Lithosphere“, Bayreuth, 1990) with about 200 participants,
 - Presentation of the results on national and international conferences and meetings as well as by publications,
 - Collaboration with national and international research groups and industry.
- 1977 - 1983 Scientific employee with the Geological Survey of Lower Saxony (Niedersächsisches Landesamt für Bodenforschung, NLB), Hannover.
- Acquisition, processing and interpretation of seismic refraction data,
 - Geothermics,
 - Data processing for ^{14}C age dating.
- 1976 - 1977 Free University Berlin (Free University of Berlin): Regular studies in geophysics along with geology and geodesy.
- Diploma thesis: „Entwicklung und Erprobung eines Programmsystems zur digitalen Bearbeitung refraktionsseismischen Datenmaterials“ (Development and testing of a programme system for digital processing of seismic refraction data),
 - Comprehensive field work in European countries and Brazil for investigations on structures of the deeper Earth,
- 1957 - 1970 Primary and Secondary School (Gymnasium) in Berlin.

Current projects

- MoBaMaSis: German-French collaboration in marine-geoscientific studies on the Mozambique continental margin along with additional partners from Mozambique and Portugal.
- SUNDAARC: High risk volcanism at the active continental margin of the Sunda Arc, Indonesia (overall co-ordination; third party funded joint research project with four other German research institutions and numerous Indonesian partners: German Federal Ministry of Education and Research).
- SUNDAARC sub-project KRAKMON: Krakatau Multi-Parameter Monitoring (project manager).
- ARGURU: Continental margin off Argentina and Uruguay (project manager, BGR budget).
- Implementation of UNCLOS (support for developing countries for delineation and sustainable usage of their maritime zones; third party funded: German Federal Ministry for Economic Co-operation and Development).

Field of work

- Initiation and coordination of international geoscientific projects
- Structure and processes at active and passive continental margins,
- Structure of the deep Earth's crust,
- Main expertise: seismic reflection, seismic refraction, gravity, magnetics.

Languages

- German - native tongue,
- English - oral and written: business fluent,
- French - oral: fluent, written: less fluent,
- Italian - oral and reading: satisfactory.
- Spanish - basics,
- Greek - basics.

Advisory boards

- Member of the advisory board of the „Seismological Central Observatory Graefenberg“.
- Member of the „Advisory Board for Seismic Field Operations“ of the „Council for Physics of the Earth (FKP-E)“ in Germany.
- Deputy chairman of the advisory board of the German Hydrographic Consultancy Pool (GHyCoP), a commercial association within the frame of public-private partnership (PPP).

Memberships

- Society of Exploration Geophysicists,
- American Geophysical Union,
- European Geosciences Union,
- Deutsche Geophysikalische Gesellschaft,
- Geologische Vereinigung,
- Deutsche Gesellschaft für Polarforschung.

References

- Dra. Montserrat Torné Escasany, Madrid, Spain,
- Prof. Dr. Cesar Ranero, Barcelona, Spain,
- Prof. Dr. Hans Thybo, Copenhagen, Denmark,
- Prof. em. Dr. David Gee, Uppsala, Sweden
- Dr. Philip A. Symonds, Canberra, Australia,
- Dr. Indroyono Soesilo, Jakarta, Indonesia,
- Amb. Luis Baqueriza, Buenos Aires, Argentina,
- C/N Hugo Roldos de la Sovera, Montevideo, Uruguay,
- Prof. Dr. Onno Oncken, Potsdam, Germany,
- Dr. Juan Díaz-Navarro, Valparaíso, Chile,
- Prof. Dr. Wolfgang Rabbel, Kiel, Germany,
- Prof. Dr. Hans-Jürgen Götze, Kiel, Germany,
- Prof. Dr. Gerhard Jentzsch, Jena, Germany,
- Dr. Karl Hinz, Hannover, Germany,
- Prof. em. Dr. Jürgen Wohlenberg, Burgwedel, Germany,
- MinDir ret. Fritz Lücke, Kiel, Germany,

Selected Peer Reviewed Publications of Christian J. Reichert (1999 – 2007)

- FRANKE, D., HINZ, K., REICHERT, C. (subm.): Geology of the Shelf of the East Siberian Sea south of the De Long Uplift / Russian Arctic from seismic images.- *Marine Geology*.
- DJAJADIHARDJA, Y.S., ASAHICO TAIRA, HIDEKAZU TOKU/AMA, KAN AOIKE, REICHERT, Chr., BLOCK, M., SCHLUETER, H.-U., NEBEN, S. (2004): Evolution of accretionary complex along the north arm of the Island of Sulawesi, Indonesia.- *The Island Arc*, ISSN 1038-4871.
- FRANKE, D., HINZ, K., REICHERT, Chr. (2004): Geology of the East Siberian Sea, Russian Arctic, from seismic images: Structures, evolution, and implications for the evolution of the Arctic Ocean Basin. – *J. Geophys. Res.*, 109, B07106, doi:10.1029/2003JB002687.
- KRAWCYK, C. AND THE SPOC TEAM, incl. REICHERT, Chr. (2003): SPOC – Subduction Processes Off Chile: Amphibious Seismic Survey Images Plate Interface at 1980 Chile earthquake. *EOS*, 84, (32) 301-305.
- RANERO, C. R., PHIPPS MORGAN, J., MCINTOSH, K., REICHERT, Chr. (2003): Bending-related faulting and mantle serpentinization at the Middle America trench. – *Nature*, 425, 367-373.
- SCHLINDWEIN, V., BÖNNEMANN, C., REICHERT, Chr., GREVEMEYER, I. & FLUEH, E. (2003): Three-dimensional seismic refraction tomography of the crustal structure at the ION site on the Ninetyeast Ridge, Indian Ocean. – *Geophys. J. Int.*, 152, 171 – 184.
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- KOPP, H., KLAESCHEN, D., FLUEH, E. R., BIALAS, J., REICHERT, Chr. (2002): Crustal structure of the Java margin from seismic wide-angle and multichannel reflection data, *J. Geophys. Res.*, 107, B2 10.1029/2000JB000095
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- GREVEMEYER, I., FLUEH, E., REICHERT, Chr., BIALAS, J., KLAESCHEN, D., KOPP, C. (2001): Crustal Architecture and Deep Structure of the Ninetyeast Ridge Hotspot Trail from Active-Source Ocean Bottom Seismology. – *Geophys. J. Int.*, 144, 414 - 431.
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